In The Claims:

Please amend the claims as follows:

1. (Currently amended) A crossbar for providing connections between a plurality of ports and a plurality of system agents via a processing system comprising:

a plurality of ports, each port capable of being an input port customized for receiving data from a source agent and an output port customized for transferring data to a destination agent; and,

crossbar control data for specifying crossbar control information for transferring data from an input port to an output port having different port configurations, said crossbar control data containing control information for formatting bit length of data from an input port to be transmitted to an output port having less width than the input port.

2. (Original) The crossbar according to claim 1 wherein the data received on the input port further comprises control data for indicating validity and destination information relating to data received on the input port.

3. (Original) The crossbar according to claim 1 further comprising at least one register on each input port and each said output port for storing data in memory.

4. (Original) The crossbar according to claim 1 further comprising at least one shift register on each input port for storing data in memory and shifting data with larger bit length to a smaller bit length data for transmission from an input port with more width to an output port with less width.

5. (Original) The crossbar according to claim 1 further comprising at least one multiplexor device on each said input port and each said output port for prioritizing transmissions of data.

6. (Original) The crossbar according to claim 1 wherein an input port and an output port of at least one of said plurality of ports are customized to have different widths.

7. (Original) The crossbar according to claim 1 wherein a plurality of said input ports are customized to have different width.

8. (Original) The crossbar according to claim 1 wherein a plurality of said output ports are customized to have different width.

9. Cancelled.

10. (Original) The crossbar according to claim 1 wherein said crossbar control data contain control information for use by any one from the group of a shift register or a multiplexor device.

11. (Original) A crossbar having a plurality of paths for providing connections between a plurality of ports and a plurality of system agents via a processing system comprising:

a plurality of ports, each port capable of being an input port customized for receiving data from a source agent and an output port customized for transferring data to a destination agent;

a plurality of virtual communication channels on each input port; and,

crossbar control data for specifying crossbar control information for transferring data from a virtual communication channel to an output port having different configurations.

12. (Currently amended) A method for transmitting data between customized ports and a plurality of system agents in a processing system via a crossbar, wherein the crossbar includes a plurality of ports, each port capable of being an input port customized for receiving data from a source agent and an output port customized for transferring data to a destination agent, and crossbar control data for specifying crossbar control information for transmitting data from an input port to an output port having different port configurations, the method comprising the steps of:

receiving data on an input port;

obtaining the destination output port for the data received on the input port;

determining whether the input port has the same configuration as the output port;

obtaining control information from the crossbar control data when the input port does not have the same configurations as the output port;

processing the data according to the obtained control information from the crossbar control data;

wherein said step of processing the data further comprising the steps of:

determining whether the width of the input port is more than the width of the output port;

submitting the data as processed data when the width of the input port is not more than the width of the output port;

obtaining the width of the output port when the width of the input port is greater than the width of the output port;

formatting the data from the input port to data configured for the obtained width of the output port;

submitting the formatted data as the processed data; and,

transmitting the processed data to ~~the~~ a destination output port.

13. (Original) The method according to claim 12 wherein said step of receiving data further comprises the steps of:

reading control data received with the data on the input port;

determining whether the control data have valid port information; and,

aborting when the control data does not have valid port information.

14. (Original) The method according to claim 13 wherein said step of obtaining the destination output port further comprises the step of obtaining the destination output port from the control data when the control data has valid port information.

15. Cancelled.

16. (Currently amended) A system for transmitting data between customized ports and a plurality of system agents in a processing system via a crossbar, wherein the crossbar includes a plurality of ports, each port capable of being an input port customized for receiving data from a source agent and an output port customized for

transferring data to a destination agent, and crossbar control data for indicating crossbar control information for transmitting data from an input port to an output port having different port configurations, comprising:

a storage medium;

a machine for transmitting data between customized ports and a plurality of system agents in a processing system via a crossbar, the machine comprising a set of instructions for:

receiving data on an input port;

obtaining ~~the~~ a destination output port for the data received on the input port;

determining whether the input port has the same configuration as the output port;

obtaining control information from the crossbar control data when the input port does not have the same configurations as the output port;

processing the data according to the obtained control information from the crossbar control data;

wherein said step of processing the data further comprising the steps of:

determining whether the width of the input port is more than the width of the output port;

submitting the data as processed data when the width of the input port is not more than the width of the output port;

obtaining the width of the output port when the width of the input port is greater than the width of the output port;

formatting the data from the input port to data configured for the obtained width of the output port;

submitting the formatted data as the processed data; and,

transmitting the processed data to the destination output port.

17. (Currently amended) A machine for transmitting data between customized ports and a plurality of system agents in a processing system via a crossbar, the machine comprising a set of instructions to: ~~to:~~:

receive data on an input port;

obtain ~~the~~ a destination output port for the data received on the input port;

determine whether the input port has the same configuration as the output port;

obtain control information from ~~the~~ a crossbar control data when the input port does not have the same configurations as the output port;

process the data according to the obtained control information from the crossbar control data;

wherein the processing of the data further comprising:

determining whether the width of the input port is more than the width of the output port;

submitting the data as processed data when the width of the input port is not more than the width of the output port;

obtaining the width of the output port when the width of the input port is greater than the width of the output port;

formatting the data from the input port to data configured for the obtained width of the output port; and,

submitting the formatted data as the processed data; and,

transmit the processed data to the destination output port.